Reg. No. : | | | | | | | | | | |

Question Paper Code: 49041

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2017

Sixth Semester

Electronics and Communication Engineering

14UEC903 - COMPUTER ARCHITECTURE AND ORGANIZATION

(Regulation 2014)

Duration: Three hours   Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. Floating point representation is used to store.

    (a) Boolean values (b) Whole number (c) Real integer   (d) Integer

2. The addressing mode which makes use of in-direction pointers is

    (a) Indirect addressing mode   (b) Index addressing mode
    (c) Relative addressing mode   (d) Offset addressing mode

3. In computers, subtraction is generally carried out by

    (a) 9's complement   (b) 10's complement
    (c) 1's complement   (d) 2's complement

4. The pipelining process is also called as _____.

    (a)Superscalar operation   (b)   Assembly line operation

    (c) Von Neumann cycle   (d)None of the mentioned

5. A micro program written as string of 0's and 1's is a

    (a) Symbolic microinstruction   (b) Binary microinstruction
    (c) Symbolic micro program   (d) Binary micro program

6. The throughput of a super scalar processor is

   (a) Less than 1   (b) 1 (c) More than 1   (d) Not Known

7. The associatively mapped virtual memory makes use of

   (a) Translation Look-aside Buffer   (b) Page table

   (c) Frame table   (d) None of these

8. Which of the following parameter decided the performance of the memory?

   (a) Latency   (b) Cycle time   (c) Transfer rate (d) All of the above

9. The computer architecture aimed at reducing the time of execution of instructions is

   (a) CISC   (b) RISC   (c) ISA   (d) ANNA

10. Both the CISC and RISC architectures have been developed to reduce the _____

   (a) Cost   (b) Time delay   (c) Semantic gap   (d) All of the above

PART - B (5 x 2 = 10 Marks)

11. Write the general format for floating point numbers.

12. Explain the concept of pipelining.

13. What is an instruction pipeline?

14. Explain virtual memory.

15. What is processor time of a program?

PART - C (5 x 16 = 80 Marks)

16. (a) Explain the different types of addressing modes with suitable examples. (16)

Or

   (b) Explain in detail about CPU organization and Explain with relevant diagram. (16)

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17. (a) Explain how multiplication is carried out using Booth's algorithm. Extend it for floating point operation. What are the advantages of modified Booth's algorithm? (16)

Or

(b) With relevant diagram and expression, explain the operation of carry look ahead adder (16)

18. (a) Explain in detail about instruction pipelining with flow chart. (16)

Or

(b) Explain in detail about instruction pipelining. (16)

19. (a) Explain preemptive and non-preemptive memory allocation strategies in detail. (16)

Or

(b) Write short notes on multilevel memories and optical memories. (16)

20. (a) Explain the use of vectored interrupts in processors. Why is priority handling desired in interrupt controllers? How do the different priority schemes work? (16)

Or

(b) Explain the IOB organization and communication between CPU and IOB. (16)

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